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HOUSE OF REPRESENTATIVES

REPORT
99-646

H.R. 182 ORIGINAL

PROVIDING THE SMALL BUSINESS ADMINISTRATION CONTINUING AUTHORITY TO ADMINISTER A PROGRAM FOR SMALL INNOVATIVE FIRMS

COMPLETED 1/2

JUNE 18, 1986.—Committed to the Committee of the Whole House on the State of the Union and ordered to be printed

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Mr. MITCHELL, from the Committee on Small Business, submitted the following

REPORT

[To accompany H.R. 4260]

[Including cost estimate of the Congressional Budget Office]

The Committee on Small Business to whom was referred the bill (H.R. 4260) to provide the Small Business Administration continuing authority to administer a program for small innovative firms, having considered the same, report favorably thereon with amendments and recommends that the bill as amended do pass.

The amendments are as follows:

Strike out all after the enacting clause and insert the following:

Section 9(e)(1) of the Small Business Act is amended by inserting immediately after "facilities," the following: "except that for the Department of Defense it shall not include amounts obligated solely for operational systems development, and"."

SEC. 2. Section 5 of Public Law 97-219 is repealed.

Amend the title so as to read:

A bill to provide the Small Business Administration continuing authority to administer a program for small innovative firms, and for other purposes.

THE PURPOSE OF THE BILL

The purpose of H.R. 4260 is to make permanent the Small Business Innovation Research (SBIR) Program authorized by the Small Business Innovation Development Act of 1982, P.L. 97-219. Under the statute the SBIR program is scheduled to terminate on October 1, 1988. The bill would accomplish its purpose by repealing section 5, the "sunset" provision, of P.L. 97-219.

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In addition to extending indefinitely the SBIR program, H.R. 4260 clarifies the definition of "extramural budget" contained in section 4 of the Act, by excluding that portion of the Department of Defense budget classified as "operational systems development" from the base of funds used by that agency to compute its SBIR program levels.

While small business has been virtually excluded from Federally-funded research and development efforts, the SBIR is making a difference by opening up new opportunities for small businesses to participate in solving our nation's technological problems. Since the inception of the program, small businesses have responded enthusiastically by submitting a total of nearly 26,000 proposals to participating agencies. By inviting creative ideas from our nation's small business community, the SBIR program is performing a unique function in stimulating innovation, and introducing our Federal agencies to new sources, not otherwise available, that can effectively and efficiently statisfy their research requirements.

H.R. 4260 is intended to continue these gains.

Introduction and Background

For a number of years your Committee has studied the problem of declining innovation, including Committee hearings to investigate the reasons for the decline of the United States from first to last place among major industrialized nations in the rate of innovation and productivity increase. A Small Business Administration (SBA) Task Force on Innovation concluded in 1979 that the climate for innovation in this country was decidedly unhealthy and that legislation was needed to encourage innovation and to strengthen the role of small business, the nation's leading innovators, in Federally-funded research and development efforts.

In the 96th Congress, following the recommendations of the 1980 White House Conference on Small Business, hearings were held on H.R. 5607, introduced by Mr. Smith of Iowa, Mr. Addabbo, and Mr. McDade, that approached the innovation issue from the perspective of patent, tax, and procurement policies. H.R. 5607 was designed to stimulate innovation by requiring changes to United States patent policy that would permit small businesses, universities, and nonprofits to retain title to inventions occurring during the performance of federally-funded R&D if reasonable efforts were made to commercialize the inventions. These patent provisions became law with the passage of the Small Business University Patent Procedures Act, P.L. 96-517.

H.R. 5607 also included amendments to the Internal Revenue Code to encourage R&D and investment in small business, and an amendment to the Small Business Act designed to increase the participation of small business in procurement activities of R&D intensive agencies. The SBIR program, in which research proposals solicited exclusively from small innovative business firms, was considered as part of H.R. 5607 and reported favorably by the Small Business Committee. The bill was not acted upon by the other Committees to which it had been referred, and was, therefore, never considered by the House.

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During the 97th Congress several SBIR bills were introduced. H.R. 4326, which combined the best features of these bills, was reported favorably by your Committee and after intensive debate, was passed by the House. The bill was signed by the President on July 22, 1982. The President made the following statement in support of the legislation:

> Small Business is a tonic for what ails this Country. By passing and signing this Act we're showing our resolve to unlease this mo innovative sector. The Small Business Innovation Development Act recognizes that we in Government must work in partnership with small business to ensure that technologies and processes are readily transferred to commercial application.

P.L. 97-219 provides that all government agencies with extramural R&D budgets in excess of $100 million must establish a SBIR program patterned after the highly successful pilot program initiated by the National Science Foundation (NSF) in 1977. Briefly, that program invites small businesses to submit innovative proposals in response to broad categories of research topics selected by the agency. Ideas that demonstrate exceptional technical or scientific merit are competed for Phase I awards of up to $50,000. Upon completion of Phase I, projects that show promise may then compete for Phase II awards of up to $500,000. A third Phase consists of follow-on funding from the private sector for the purpose of pursing commercialization. In some cases, a follow-up contract with the awarding agency may be considered.

The Act requires that only a small percentage of the agency's R&D budget be utilized for the SBIR program. That percentage, when fully phased-in, cannot be less than 1.25 percent.

The SBIR programs mandated by the Act were established in twelve (12) Federal agencies that met the $100 million R&D budget requirement. The Department of Interior, however, has since withdrawn from the program due to budget reductions.

In addition to the SBIR programs, the Act required agencies with R&D budgets in excess of $20 million to establish small business goals. Another seven (7) agencies have done so.

Competition for SBIR awards has been extremely high and the response of the small business community has exceeded all expectations. The quality of research proposals has improved each year and now is considered by the agencies to be equal to, or often superior to, those received from the traditional performers, such as universities, non-profits, Federal laboratories, and large business concerns.

During debate on the initial legislation, your Committee agreed that an initiative of this type must be permitted to prove itself. Although the program had demonstrated considerable success at NSF, it was agreed that a government-wide program of similar nature should be evaluated on its own merits. For this reason, a sunset provision was adopted by the Congress, and the programs created by the Act are scheduled to cease on October 1, 1988.

The Subcommittee on General Oversight and the Economy, chaired by Nicholas Mavroules, held oversight hearings during the 1st session of the 99th Congress. On April 25, 1985, small business-

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es were invited to present testimony concerning their participation in the SBIR program. Those who testified spoke highly of the program and noted its potential benefits for society and the Federal government. The hearing record indicates that the majority of small business SBIR award winners were new entrants to the Federal marketplace. Only 20% of SBIR Phase I awardees in the first year of the program had previous Federal procurement experience. Moreover, the level of enthusiasm within the small business community was remarkable due in large part to the diversity of firms becoming involved and optimism over the new opportunities available for participation in an arena that once had been inaccessible.

Witnesses at the April 25th hearing included a representative of the Smaller Business Association of New England (SBANE), who spoke in strong support of the program, and the Assistant Administrator, Office of Innovation, Research and Technology of the Small Business Administration. Both witnesses presented statistical evidence that progress was being made in achieving program goals, and that geographical distribution was widespread. Massachusetts, California, and Virginia had consistently strong showings in numbers of SBIR award winners, but no single locality dominated. In the first year of the program, forty (40) states had award winners. By fiscal year 1985, awards had been made in 47 states and the District of Columbia, and all areas of high technology had been covered.

The Subcommittee continued its review of the Act's implementation in hearings conducted on November 6 and 21. Testimony was requested from the three (3) agencies given statutory responsibility for SBIR oversight. The Act requires SBA and the Office of Science and Technology Policy (OSTP) to independently survey and monitor all phases of implementation and operation of the SBIR programs. Broadly speaking, OSTP is charged with insuring the quality of research while SBA is responsible for protecting the interests of small business. In addition, section 6 of the Act requires the Comptroller General to report to Congress on the implementation of the Act and nature of research conducted.

These hearings focused on the first of a series of reports issued by the General Accounting Office (GAO). The GAO report, "Implementing the Small Business Innovation Development Act—the First 2 years," dated October 25, 1985, confirmed that most participating agencies were making substantial efforts toward program implementation and that SBA had actively pursued and fulfilled its assigned responsibilities. OSTP, on the other hand, charged with insuring the quality of SBIR research, had purposely limited its efforts. According to GAO, there were two reasons for this inaction. First, OSTP believed its required duties to be inappropriate. Secondly, OSTP claimed its staff resources were limited, SBA monitoring appeared to be adequate, and duplicative efforts should be avoided.

Nevertheless, subsequent testimony from Dr. George A. Keyworth, Science Advisor to the President and Director of OSTP, affirmed the value of the SBIR programs, stating that they were part of what he considered to be "among the more important kinds of investments that the Federal Government makes." In his testimony he admitted quite candidly that his initial doubts were "rap-

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idly being dashed," that the program was showing signs of "first class augur", and that he was quite excited about it.

On February 26, 1986, H.R. 4260 was introduced by Mr. Mavroules, Chairman of the Subcommittee on General Oversight and the Economy, Mr. Bedell, Mr. LaFalce, and Mr. Addabbo for the purpose of providing continuing authority for the SBIR program beyond the sunset date. The Subcommittee then held a series of hearings to consider H.R. 4260 and to ascertain the positions of the agencies relative to their participation in the SBIR program. On May 8, 13, and 15, 1986, the Subcommittee invited the eleven participating agencies to appear. Without exception the agencies expressed their support for the program. They believed that it was contributing to their mission goals, working well, and should be continued.

At Subcommittee mark-up on May 22, 1986, the Subcommittee on General Oversight and the Economy adopted unanimously an amendment to H.R. 4260 in the nature of a substitute and ordered it to be favorably reported. The amendment included repeal of the sunset provision and added a paragraph to clarify the methodology used by the Department of Defense to compute the yearly level of its SBIR Program. The clarifying provision was added at the request of the Department.

At a full Committee meeting held on June 11, 1986, the measure as amended by the Subcommittee was ordered favorably reported by a vote of 41-0.

What the Bill Would Do

The bill would reauthorize the Small Business Innovation Development Act of 1982, P.L. 97-219, and make permanent the government-wide Small Business Innovation Research (SBIR) and goaling programs set to terminate at the end of FY 1988. It would accomplish this purpose by repealing Section 5, the "sunset" provision.

It also would clarify the intent of Congress and resolve the confusion surrounding the definition of extramural research and development budget which the Department of Defense (DoD) uses as a base to compute SBIR program levels. The definitional section of the Act would be amended to exclude those amounts of the Department of Defense research, development, test and evaluation budget (RDT&E) used for "operational systems development," that is, for projects in production or approved for production. In order to clearly define the DoD baseline, therefore, the bill would amend Section 9 of the Small Business Act by modifying the definition of "extramural budget" with the following exclusion: "except that for the Department of Defense it shall not include amounts obligated solely for operational systems development." It is the opinion of your Committee that any change to statutory definitions, including "research and development" and "extramural budget", can only be effected through the type of statutory change proposed here and cannot be otherwise accomplished through administrative action.

The Need for the Legislation

The Small Business Innovation Research (SBIR) program, scheduled to "sunset" in 1988, has generated an unprecedented wave of

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interest and enthusiasm both in this country and abroad. The Small Business Administration (SBA), the General Accounting Office (GAO), and the Office of Science and Technology Policy (OSTP), agencies required by statute to monitor the program, all agree that it is working well. In addition, the participating agencies who testified at the Subcommittee hearings substantiated that fact stating that the program should continue.

Over 30 states have established similar programs to complement the Federal SBIR program or duplicate it on a state level. Foreign countries, including Japan, the United Kingdom, the Netherlands, France, and Canada, have investigated the program, and several are implementing programs of their own to stimulate innovation and strengthen their economies by utilizing the energies and skill of small business concerns. Although the enabling legislation, the Small Business Innovation Development Act of 1982, met with initial skepticism from some quarters, that skepticism has rapidly dissipated and there is every indication that the high expectations of its supporters are being realized.

The need for the Act was never doubted by the small business community which was confident of its ability to make a major contribution to the nation's $50 billion research and development (R&D) effort if given half a chance. Small businesses constitute 99 percent of all business establishments in this country, employ the majority of our nation's workforce, contribute approximately 45 percent of the gross national product, and are acknowledged as leading innovators. Yet small business was virtually shut out from Federal R&D efforts. Typically, small business receives approximately 2.5 to 3 percent of the total R&D budget. Moreover, prior to the implementation of the government wide SBIR program, that share was steadily declining.

Legislation was needed to increase the opportunities for small business to participate, and to overcome the built-in bias in favor of traditional performers, such as universities, Government labs, large business concerns, and nonprofits. The SBIR program was considered the appropriate mechanism to solve this problem, having demonstrated its effectiveness during the six years in which the pilot program had been operational at the National Science Foundation (NSF).

Four years later, it appears that our reliance on the program was totally justified. There are early indications that the SBIR program, now in its fourth year, has stopped the steady decline of small business percentages and is beginning to reverse the trend. Preliminary figures from the Small Business Administration (SBA) Office of Advocacy show that the small business share of 1985 R&D procurement dollars (procurement is defined in this instance as excluding grants and agency in-house expenditures) has increased by .5 percent. There is also evidence that agencies are using the SBIR program to identify capable performers among untested firms, those without a government "track record", for high value mainstream contracts. The SBIR program has convinced procurement officials that small firms can accomplish research of value equal to that of the traditional, favored performers and are doing so without jeopardizing quality.

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The SBIR program solicits innovative ideas to solve the nation's most pressing problems and encourages commercial development of those ideas. It is the only Government-wide program to do so on an organized basis. It is too early to point to major commercial breakthroughs. Commercialization is costly and the value of an innovation is often assessed only after the elapse of several years. However, the evidence presented strongly indicates that the commercialization goals of the program are being successfully achieved. Your Committee was advised of the following examples:

In 1977, NSF funded a Phase I genetics research proposal from Collaborative Research, Inc., Waltham, Massachusetts. NSF made awards of $25,000 in Phase I and a $239,000 in Phase II to conduct research on Enhancement of Animal Protein Production by Novel Genetic Technology. Dow Chemical was interested in this type of research and found Collaborative Research by reading abstracts of NSF SBIR awards. Dow subsequently invested $11.5 million in the SBIR firm. Collaborative Research, Inc. had 33 people at the time of the Phase I award and relatively old facilities. Today, the firm has 135 employees and large new laboratories in Lexington, Massachusetts. It has also gone through two very successful public offerings and is a leader in the biotechnology field. It has raised over $40 million based on the initial genetics research conducted under the 1977 NSF SBIR award.

Native Plants, Inc., of Salt Lake City, Utah, received a Phase I award for research on a Mycorrhizal Innoculated Containerized Plant Growing System in 1980. The company had 45 employees and received a $30,000 Phase I and related $200,000 Phase II award. It has a Phase III commitment of an equal amount from a Chicago based venture capital firm—F.H. Prince and Company. The research was highly successful and $1 million of private funds were invested in the project. This and other SBIR awards helped the company obtain an additional $39 million of private investment in the form of several R&D Limited Partnerships and investments by five large industrial firms. The company now has 250 employees and outstanding new laboratories in a research park adjacent to the University of Utah campus.

Verax Corporation of Hanover, New Hampshire, received a Phase I award $35,000 in 1982 for research on Long-life Catalysts for Immobilized Microorganism Fermentors. The Phase I research was very successful and the fementation process has been speeded up by a factor of 10 as a result. Verax obtained a follow-on funding commitment and has received more than $3 million in new investment. It has a new laboratory, and is already selling products to major biological and pharmaceutical firms. Verax grew quickly from 4 to 110 employees and spun-off two separately financed scientific instrument firms, one in biotechology and the other in medical instrumentation. These spin-offs are direct by-products of the NSF and National Institutes of Health (NIH) SBIR projects. Verax continues to have 60 employees even after the two spin-offs.

The SBIR program is an extremely competitive procurement program. During fiscal year 1985, the participating agencies received

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9,851 proposals and made 1,398 Phase I and 405 Phase II awards. On a program cumulative basis there have been 25,859 proposals, 3080 Phase I awards and 744 Phase II awards. As of the end of FY 1985, the program has awarded in excess $355 million dollars. No single geographical area dominates; the awards have gone to 47 states and the District of Columbia and cover all areas of science and high technology.

Of paramount importance is the fact that quality standards have not been compromised. Dr. William F. Raub, Director of the Office of Extramural Research and Training for the National Institutes of Health, pointed out during Subcommittees hearings that the NIH had been concerned that there would be an inadequate pool of qualified applicants. Noting that this is no longer a concern, Dr. Raub stated:

> The SBIR mean score of 250 compares favorably with the mean score of 227 for NIH regular research grant applications . . . thus we are confident that the quality gap between NIH SBIR awards and traditional project grants is proving to be evanescent.

The Department of Energy found the same to be true. Dr. Ryszard Gajewski, SBIR program manager of DOE, noted during the hearings that "experience has taught us that excellent SBIR proposals can be encouraged in virtually every field of Departmental technical activity." All other agency witnesses made similar statements. The following are brief examples of projects having high technical quality and scientific merit initiated under the SBIR program.

Bend Research, Inc., of Bend, Oregon, is at work on the following technologies under the SBIR program:

A process to extract oxygen from air, that promises to cut the costs of this important chemical and extend its uses;

A method to clean up heavy metal pollutants from sludges produced in the plating industry;

A method to recycle washwater, urine, and other waters in the space station;

A method for extracting drinking water from vehicle exhausts that could be used by the military, for example, in remote areas.

Viking Energy Corporation of Pittsburgh, Pennslyvania, is developing a robot for the Department of Energy to be deployed to decontaminate highly radioactive cells. It will have a broad range of specific applications:

Handling of radioactive and toxic wastes in buildings and outdoors;

Monitoring of radiation levels;

Decontaminating radioactive work cells;

Performing visual surveys;

Dismantling radioactive work cells;

Handling of explosive materials; and

Performing work in health-hazardous environments—noise, vibration, odors, smoke, excessive heat or cold, oil spray, flying chips, monotony, and risks that could result in serious personal injury.

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Without the SBIR contracts, this small company would not have been able, on its own, to carry on the project.

Not all projects awarded under the program are "high tech". A small company in San Diego, California is developing a process that increases the size and weight of sub-market size lobsters by controlling water temperatures. The research on long-term holding and culture of American lobsters is being performed under an SBIR grant from the National Oceanic and Atmospheric Administration (NOAA) and will contribute to conservation of our valuable fisheries resources.

Because Phase II projects are just now approaching completion, cumulative figures for Phase III follow-on funding are not generally available, except from NSF, whose program extends back to 1977, and the State of Massachusetts, which has maintained some state-wide statistics independently of the Federal government. During the first four (4) solicitation years of the NSF program, the $18.4 million in Federal funds expended were matched by private sector follow-on funding amounting to $149.5 million. This is a leveraging factor of 8:1 of private sector to Federal funds.

Figures concerning 1983 SBIR awards to small firms in the State of Massachusetts were presented to your Committee during the April 1985 hearing. Phase III follow-on commitments constituted a potential flow of venture capital funds into the state amounting to $91 million, a rate of 5:1, for one program year alone.

SBIR LEVERAGING FACTOR—MASSACHUSETTS FY 1983

Phase I (142): $7 million in awards.
Phase II (52): $18 million in awards.
Phase III commitment: Potentially $91 million.

The value of this Phase III commitment illustrates the best business judgment of the private sector as to commercial potential. This is the appeal of the SBIR mechanism—it subjects the creative energy of the entrepreneur to the needs and requirements of mission-oriented agencies, and balances the two with private sector investment wisdom and experience.

Given this clear record of success, the participating agencies presented statements before the Subcommittee that illustrate the wide-spread support for the program in the government.

Mr. Richard J. Green of the National Science Foundation stated:

> We are convinced the program is working as intended. SBIR was designed to provide extra value to the National economy from the large Federal presence in R&D . . . The extremely competitive nature of the program as well as the built-in incentive to utilize Government research as a base for high risk ideas and follow-on private sector investment also contribute to its effectiveness. We believe the experiment is over. The results are in—the NSF program is a success.

Furthermore, while increasing small business participation in the R&D process, the SBIR program has allowed the agencies to explore new and risky ideas that would otherwise never have been

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considered. Mr. Harry W. Johnson, Director of the SBIR Office of Commercial Programs at NASA, testified:

> Since the enactment of the SBIR statute, NASA research personnel and their management have developed strong support and enthusiasm for the program. NASA has found that a great number of new and attractive approaches to problems and opportunities identified in the Program Solicitation have been offered by a large number of innovative small firms. Many of these ideas had not previously been volunteered to NASA by those firms, and possibly would never have been offered in the normal course of events.

Dr. Leo Young, Director for Reseach and Laboratory Management, Department of Defense, commented on the need to continue the program. He said that the department is "enthusiastic about the program and feel(s) it has been of real benefit to DoD, while providing valuable new opportunities for small business . . . It is our view that the current Act is fundamentally sound, is working well, and should continue for the immediate future."

Dr. Clare I. Harris, Associate Administrator, Cooperative State Research Service of the U.S. Department of Agriculture, added the following observation:

> Many of the proposals contain highly sophisticated technological concepts. There seems to be little doubt that well trained scientists are finding employment in their own or other small business firms.

Although the SBIR program does not expire until 1988, several agency witnesses indicated that they must begin making their budget decisions at the present time and, accordingly, need to know whether Congress will continue the program. It is necessary, therefore, that the Congress permanently reauthorize the SBIR program by passing H.R. 4260 in order to ensure the continuity of agency Phase I and Phase II solicitations and to eliminate the possibility of substantial disruptions in planning the procurement strategy for future R&D awards.

The Office of Productivity, Technology, and Innovation (OPTI) at the Department of Commerce is emerging as a lead agency in matters of innovation policy within the Federal government. In a statement presented before the Subcommittee in the May 13th hearing to consider the program's reauthorization, Norman J. Latker, Director of the Federal Technology Management Division, OPTI, praised the concept of the SBIR program which tests the feasibility of bringing innovative concepts into practical application without conditions or unnecessary regulatory control that impedes commercial application of the resuits:

> The execution and impact of this program is of great importance to Commerce not only as an agency R&D sponsor but in our broader role of creating incentives and removing barriers to swift introduction of new U.S. products and processes into the commercial marketplace.

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Although the agencies were unanimous in their support of the SBIR concept, none felt that the program would be continued without statutory authorization. Mr. Latker's statement addressed this problem:

> It is important to keep in mind why the SBIR program continues to command widespread support:
>
> First, outside of the government's basic research program, most R&D programs cannot easily address and support a private section technology solution to an agency problem unless it had been specifically budgeted,
>
> Second, the program has successfully developed as required by Congress a 'simplified standardized funding process' in response to the inability of small innovators and entrepreneurs to work within burdensome and inconsistent regulatory theories; and
>
> Last, Congress required that agencies permit the awardee to retain ownership of the ideas proposed to the agency. It is the patentable, 'copyrightable' or technical data results that awardees own and license to third party developers and investors that act as the incentive to further private sector funding and commercialization.
>
> Outside the template created by Congress for the SBIR program, these principles cannot be reproduced without further legislative and regulatory reform.

There is a definite need, therefore, for the SBIR formalized program mechanism to maintain this cooperative effort between government agencies and small business. Because of higher competition requirements imposed as part of recent procurement reform legislation, it is unlikely that the gains resulting from P.L. 97-219 would continue without reauthorization of the Act.

Commercialization of ideas developed under the SBIR Act is a primary goal of the program. While there is evidence that this is occurring, your Committee encourages the agencies to give greater weight to the possibilities for Phase III follow-on funding when selecting Phase II projects so that goals of the SBIR Act may be more fully realized.

DEPARTMENT OF DEFENSE R&D FUNDS

An amendment to P.L. 97-219 is needed to resolve the confusion concerning a portion of DoD's R&D funds excluded by the department when computing the size of its yearly SBIR program.

In its report, "Implementing the Small Business Innovation Development Act—The First 2 years," the General Accounting Office (GAO) raised the issue of a disagreement between SBA and DoD concerning the definition of extramural R&D for purposes of the SBIR program. GAO found an inconsistency in the manner in which DoD reported categories of research activities, and questioned the exclusion of funds appropriated for "operational systems development" commonly referred to as "6.6" funds.

The DoD Five-Year Defense Program (FYDP) consists of ten program categories, one of which is Program "6," entitled "Research and Development." Program 6 is subdivided into 5 categories: Re-

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search (6.1), Exploratory Development (6.2), Advanced Development (6.3), Engineering Development (6.4), and Management and Support (6.5). Program 6 contains all appropriated funds for military programs under development but not yet operational or approved for production.

An additional amount of appropriated R&D funds, extraneous to Program 6, is included in several of the other FYDP programs to provide for needed changes to weapons systems already operational or in production. This category is for "operational systems development" and although technically not part of Program "6" at all, is often called "6.6." When computing the statutory percentages on which SBIR program levels are based, DoD includes Program 6 funds only and excludes operational systems development funds because the Department considers them inappropriate for the kinds of projects contemplated by the SBIR program, and their inclusion would skew DoD's participation levels, drawing disproportionate compensating amounts from other areas of the R&D budget.

In response to a letter sent by the Committee asking GAO for clarification, on February 21, 1986, GAO stated that in the opinion of the Comptroller General, Category 6.6 funds were within the definition of R&D included in P.L. 97-219, but that the Committee might wish to consider whether 6.6 activities should be exempted from the Act because of "practical difficulties."

Your Committee reviewed this issue extensively, and after carefully considering information submitted by the DoD, believes that a statutory clarification is appropriate.

That opinion is based on two considerations, the kinds of activities for which the funds are used, and defense readiness. Operational systems development funds are needed to make corrections to existing weapons not performing properly, to make changes dictated by an evolving enemy threat, or to make modifications to incorporate technological breakthroughs which enhance effectiveness of "fielded" weapons. According to Dr. Leo Young, Director for Research and Laboratory Management, Office of The Deputy Under Secretary of Defense:

> * * * it is necessary to allocate these funds to the original supplier of the weapon system or component so that the existing hardware can be altered. Introducing new equipment from different suppliers would obviously be more expensive, would probably delay the availability of the system to the forces, and would have serious consequences on the interfacing with all of the other weapons sub-systems.

An exclusion for operational systems development funds appears appropriate and necessary to avoid an unnecessary national security risk.

While it is not your Committee's intent that DoD increase its future SBIR program levels to compensate for its previous failure to include 6.6 funds, it should be clearly understood that program levels defined by the statute are intended to be minimums only rather than ceilings. Accordingly, DoD may find it advantageous to increase its program performance levels in those areas appropriate to the SBIR purposes. Your Committee would encourage such ef-

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forts provided, of course, that they contribute to the accomplishment of the agency's mission.

Conclusion

The purposes of the Small Business development Act of 1982 are four-fold: to stimulate technological innovation; to use small business to meet Federal research and development needs; to foster and encourage participation by minority and disadvantaged persons in technological innovation; and to increase private sector commercialization of innovations derived from Federal research and development. Your Committee believes that the Act has achieved its intended purposes, and that small businesses are developing innovations that will create new jobs, generate tax revenues, retard inflation, improve the standard of living, and create new products and processes that can make a major difference in international competitiveness. These economic benefits are being realized with no adverse impact to the Federal budget. SBIR awards are made from funds otherwise appropriated and, in the opinion of many, constitute the best use of those funds.

High technology innovative small businesses provide the greatest advances in the country's technology base for a given investment of resources.

The past four years have seen proven performance of small businesses in responding to the research and development (R&D) needs of Federal agencies with major R&D efforts. Accordingly, the sunset on this program should be repealed.

Matters Required To Be Discussed Under House Rules

In compliance with clause 2(l)(2) of rule XI of the House of Representatives, the following statement is made relative to the vote on the motion to report H.R. 4260.

A majority of the Committee voted in person and was actually present and the motion was approved by a recorded vote of 41-0.

In compliance with clause 2(l)(3) of the rule XI of the Rules of the House of Representatives, the following statements are made:

With regard to subdivision (A), relating to oversight findings, the Committee finds, in keeping with clause 2(b)(1) of rule X, that this legislation is in full compliance with the provision of this rule of the House which states:

> In addition each such committee shall review and study any conditions or circumstances which may indicate the necessity or desirability of enacting new or additional legislation with the jurisdiction of that committee. * * *

With regard to subdivision (B), relating to the statement required by section 308(a) of the Congressional Budget Act of 1974, the following statement is made relative to the legislation:

Section 3(a)(2) of the Congressional Budget Act defines the term "tax expenditures" as those revenue losses attributable to provisions of the Federal tax laws whch allow a special exclusion, exemption, or deduction from gross income or which provide a special credit, a preferential tax rate of tax, or a deferral of tax liability.

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None of the provisions of H.R. 4260 deals with taxation and thus, in your Committee's opinion, this bill does not provide new or increased tax expenditures.

Section 3(a)(2) of the Congressional Budget Act defines the term "budget authority" as authority provided by law to enter into obligations which will result in immediate or future outlays involving Government funds.

Under this definition, it is the final action of Congress that authorizes an agency to enter into obligations which constitutes new budget authority. In those cases which entail (1) an authorization for an agency to undertake a program; (2) an authorization for appropriation of funds to permit that agency to enter into obligations; and (3) an actual appropriation of such funds, it would be only the final action of Congress in appropriating funds which constitutes the budget authority.

None of the provisions of H.R. 4260 appropriates funds and thus, in your Committee's opinion, the bill does not provide new budget authority. Accordingly, no comparison of budget authority, outlays or tax expenditures or 5-year projections have been made.

Section 401(c)(2) of the Congressional Budget Act defines the term "new spending authority" as spending authority not provided on the effective date of P.L. 99-177, to

> (1) enter into contracts under which the United States is obligated to make outlays, the budget authority for which is not provided in advance by appropriation Acts;
>
> (2) to incur indebtedness (other than indebtedness incurred under chapter 31 of title 31 of the United States Code) for the repayment of which the United States is liable, the budget authority for which is not provided in advance by appropriation Acts;
>
> (3) to make payments (including loans and grants), the budget authority for which is not provided for in advance by appropriation Acts, to any person or government if, under the provisions of the law containing such authority, the United States is obligated to make such payments to persons or governments who meet the requirements established by such law;
>
> (4) to forgo the collection by the United States of proprietary offsetting receipts, the budget authority for which is not provided in advance by appropriation Acts to offset such foregone receipts; and
>
> (5) to make payments by the United States (including loans, grants, and payments from revolving funds) other than those covered by subparagraph (1), (2), (3), or (4), the budget authority for which is not provided in advance by appropriation Acts.

Under this definition, the bill does not contain new spending authority.

Section 3(a)(10) of the Congressional Budget Act defines the term "credit authority" as the authority to incur direct loan obligation or to incur primary loan guarantee commitments.

Under this definition, the bill does not contain new credit authority.

With regard to subdivisions (C) and (D), the cost estimate of the Director of the Congressional Budget Office relative to H.R. 4260 follows:

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U.S. CONGRESS
CONGRESSIONAL BUDGET OFFICE,
Washington, DC, June 16, 1986.

Hon. PARREN J. MITCHELL,
Chairman, Committee on Small Business, U.S. House of Representatives, Rayburn House Office Building, Washington, DC.

DEAR MR. CHAIRMAN: The Congressional Budget Office has reviewed H.R. 4260, a bill to provide the Small Business Administration continuing authority to administer a program for small innovative firms, and for other purposes, as ordered reported by the House Committee on Small Business, June 11, 1986. We expect that this enactment of this bill would result in administrative costs of about $5 million to $10 million annually beginning in 1989.

H.R. 4260 would provide permanent authority for the small business innovation and research (SBIR) programs administered by agencies whose extramural research and development budgets exceed $100 million annually. Each of these agencies is required to set aside funding for the program based on an increasing percentage of its budget for research and development; by 1987, this amount will reach its ceiling of 1.25 percent.

Since 1983, about $700 million has been awarded to small businesses that participate in the SBIR program. Under current law, the program would expire after fiscal year 1988. Based on information from several agencies, and assuming that the applicable extramural research and development budgets continue to grow at historical rates, we expect that agencies will spend the equivalent of about 1 percent to 2 percent of the set-aside to directly administer this program, or about $5 million to $10 million annually.

The bill would codify existing practices by excluding certain research and development funds of the Department of Defense from the SBIR program.

We expect that no cost would be incurred by state or local governments to implement this bill.

If you wish further details on this estimate, we will be pleased to provide them.

With best wishes,
Sincerely,

RUDOLPH G. PENNER, *Director.*

No oversight findings or recommendations have been made by the Committee on Government Operations with respect to the subject matter contained in H.R. 4260.

In compliance with clause 2(l)(4), the Committee concludes that the provisions of this legislation in and of themselves will have no inflationary impact on prices and costs in the operation of the national economy.

In compliance with clause 7, rule XIII of the House of Representatives, the Committee makes the following statement:

The costs attributable to this bill for the current fiscal year and for fiscal years 1987–91 are as follows: This bill does not authorize the appropriation of funds. The only expenses will be for administration and your committee estimates this cost at not to exceed $5 million per year. In addition, the improved R&D efforts should actually result in a net savings.

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No cost estimate was submitted by any Government agency on H.R. 4260 to your Committee.

In your Committee's opinion, the above statements fully comply with the Rules of the House of Representatives.

Section-by-Section Analysis

Section 1 amends section 9(e)(1) of the Small Business Act to exclude from the definition of "extramural budget" amounts obligated for operational systems development by the Department of Defense.

Section 2 repeals section 5, the "sunset" provision of P.L. 97-219, The Small Business Development Act of 1982.

Changes in Existing Law Made by the Bill, as Reported

In compliance with clause 3 of Rule XIII of the Rules of the House of Representatives, changes in existing law made by the bill, as reported, are shown as follows (existing law proposed to be omitted is enclosed in black brackets, new matter is printed in italics, existing law in which no change is proposed is shown in roman):

Section 9 of the Small Business Act

Sec. 9. (a) * * *

* * * * * * *

(e) For the purpose of this section—

(1) the term "extramural budget" means the sum of the total obligations minus amounts obligated for such activities by employees of the agency in or through Government-owned, Government-operated facilities, *except that for the Department of Defense it shall not include amounts obligated solely for operational systems development, and* except that for the Agency for International Development it shall not include amounts obligated solely for general institutional support of international research centers or for grants to foreign countries;

* * * * * * *

Section 5 of the Small Business Innovation Development Act of 1982 (P.L. 97-219)

[Sec. 5. Effective October 1, 1988, paragraphs (4) through (7) of section 9(b) of the Small Business Act (as added by section 3 and subsections (e) through (k) of section 9 of the Small Business Act (as added by section 4) are repealed.]

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